



ZINGA®

FILM APPLIED GALVANISING SYSTEM



Contains
minimum
96%
zinc when
dry

ZINGA UK
a division of MGDUFF Ltd



CERTIFIED TO BS6920 & BS476



FILM APPLIED GALVANISING

Zinga is a film-galvanising system containing atomised zinc particles that are bound together with a unique and highly conductive binder. It bonds extremely well onto correctly prepared steel, brass, aluminium and cast-iron to form a solid zinc layer containing a minimum of 96% zinc in the dry film.

Zinga has all of the advantages of hot-dip galvanising and zinc thermal spray, but with none of their application and over-coating problems.

2.72m²
coverage per kg
at 50µm
DFT

Zinga is:

- Easy to use.
- One component.
- A cost-effective alternative to hot-dip galvanising.
- Highly resistant to mechanical abrasion.
- Certified as non-flammable (BS476 parts 6 & 7) for fire propagation and spread of flame.
- Certified low smoke emissions BS6853 – B2.
- Certified low toxicity BS6853-D8.4.
- Certified to Norsok M501-7 and M501-1 (rev6). 3
- Certified to ISO12944 – 6.

Zinga can:

- Be used to repair or build-up existing hot-dip galvanising.
- More than double the service-life of a duplex coating system.
- Be applied onto damp surfaces and at very high humidity (95%).
- Be applied down to -15°C to +40°C
- Be welded through to x-ray quality up to 60 microns dry film thickness

Zinga offers:

- Longer protection than hot-dip galvanising of the same thickness (DFT)
- Easy on-site application
- Extreme adhesion properties onto steel and other metallic surfaces
- Extreme flexibility: it will not crack or delaminate
- Minimal preparation on existing hot dip galvanising
- Cathodic protection
- Unlimited pot & shelf life
- Lower environmental impact Vs HDG process

Technical Specification

Surface Preparation	Grit blast to SA2.5 (Rz 50 - 70 µm)
Approx. Drying Times @15°C	
Touch Dry	10 mins
Dry to Handle	30 mins
Overcoat with Zinga	30 - 60 mins
Overcoat with Epoxy	24 hrs
Application Temp Range	-15°C to +40°C
Application Humidity Range	<95%
Substrate Temp	>3°C above Dew Point
Thinner	Zingasolv
Cleaner	Zingasolv/Gunwash
Pot Life	Unlimited
Packaging	Available in 1Kg Can 2Kg Can 5Kg Can 10Kg Can 25Kg Can 500ml Aerosol

Coverage & Consumption

When brushed, rolled or spray applied the layer thickness will be 50µm DFT. At this film thickness Zinga will provide a coverage of 2.72m²/kg.

Full product specification sheets are available to download at www.zinga-uk.com or from our office on **01243 770 726**.

GENERAL APPLICATION GUIDELINES

Unique system application

Zinga is normally used as a stand-alone system, applied in two or three layers to obtain a maximum thickness (DFT) of 120 to 180 µm, depending on the specification.

Two 60 µm DFT layers of Zinga conform to NORSOK M-501 system 7 and ISO 12944 categories Im2 and Im3 standards.

Unique or stand-alone system application is strongly recommended. This application makes for easier maintenance. Over time, the Zinga layer will deplete owing to its cathodic protection properties, at which point a new layer of Zinga can be easily applied.

Duplex system application

In the case of duplex system application, a single coat of Zinga should be applied, preferably by spraying, to obtain a maximum thickness (DFT) of 60 to 80 µm.

The surface coated with Zinga should be free of zinc salts and other contaminants prior to the application of a topcoat.

Zinga can be overcoated with a wide range of compatible sealers and topcoats. To avoid pinholes, the mist coat and full coat application technique is recommended for all topcoats.

Stripe-coat application

Before the application of the first full layer of Zinga, it is recommended that a stripe coat of Zinga is applied to all sharp edges, nuts, bolts and weld areas using a brush.

Re-coating

Zinga can be applied over the top of areas that have been previously treated by hot-dip galvanising, metallisation or Zinga to renew or enhance cathodic protection. The thickness (DFT) of Zinga to be applied in this instance depends upon the thickness of the existing zinc layer.

Note: A coat of Zinga usually dries at around 50µm DFT, regardless of the application method. At this thickness, one kilogramme of Zinga covers 2.72m².

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REFERENCE & CERTIFICATION

The Zinga film-galvanising process has been around globally for nearly 40 years and is currently being used in 52 countries over 5 continents.

The system of film-galvanising was introduced during the 1970's and was designed for use at ambient temperature. Throughout this time Zinga has gained approval and certification for a large number of varied applications in multiple environments.

Approvals:

- London Underground
- Land Rover part number
- NATO codification
- ETA / CE registration
- Lloyds Register
- DNV
- MOD
- US Army
- Full list available on our website

Certification

- NORSOK M501 Parts 1 & 7 for the oil and gas industry
- ISO 12944 - ISO independent testing for life expectancy
- BS 476 parts 6 & 7 - Fire propagation and surface spread of flame.
- BS6853 - B2 & D8.4 - smoke density and toxic emissions
- BS3900 - cathodic disbondment ASTM G95-07
- EN1179 - Zinc purity
- ISO 2812 - resistance to salt and waste water
- EN13501 - Reaction to fire
- Full list available on our website

References

- Zinga corrodes slower than HDG (BNF FULMER Report)
- Zinga will re liquidise to become a single layer upon recoating (Royal Ghent University)
- Weld ability of Zinga (Rolls Royce / Nottingham University)
- Galvanic action of Zinga (Royal Ghent University)
- Full list available on our website

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AQUAZINGA

AquaZinga is a two-pack, 100% water-based anti-corrosion system.



3.25m²
coverage per kg
at 50-60µm
DFT

It is based on inorganic zinc silicates and, with its high zinc content (92% in the dry film), it provides cathodic protection to ferrous metals.

AquaZinga is highly resistant to abrasion and is designed to withstand corrosive environments and severe conditions, including high temperatures (up to 600°C).

As a stand-alone system, it can be used as an alternative to hot-dip galvanising and metallisation. It can also be used as a primer under high-heat paints.

Typical uses for AquaZinga include ballast tanks, turbine exhausts and high-heat pipelines.

AquaZinga

- Works in constant temperatures up to 600°C.
- Is highly resistant to abrasion.
- Is highly resistant to steam and other hot gases.
- Is highly resistant to hydrocarbons.
- Offers high tolerance to thermal shock.
- Offers high tolerance to mechanical shock.
- Has a high level of conductivity.
- Has a Ph range of 5.5 to 12.5.
- Works in tandem with sacrificial anodes.
- Can be overcoated with a wide range of compatible

Technical Specification

Surface Preparation	Grit blast to SA2.5 –SA3 (Rz 50 –70µm)
Approx. Drying Times @15°C	
Touch Dry	15 mins
Dry to Handle	4 hours
Overcoat with AquaZinga	8 hours
Overcoat with Epoxy	8 hrs
Application Temp. Range	+5°C to +30°C
Application Humidity Range	60 – 80%
Substrate Temp.	>3°C above Dew Point
Shelf Life	12 months
Pot Life	6 hours
Packaging	Available in 5kg (3.5 powder, 1.5 binder) 10kg (7 powder, 3 binder) 25kg (17.5 powder, 7.5 binder)

AquaZinga application guidelines

Unique system application

When used as a stand-alone system, AquaZinga should be applied in two layers to obtain a maximum thickness (DFT) of 80 µm.

Duplex system application

In the case of duplex system application, a single layer of 50 to 80 µm of AquaZinga should be used.

Prior to the application of a topcoat, the surface coated with AquaZinga should be free from zinc salts and other contaminants. A wide range of compatible sealers and topcoats can be applied to AquaZinga.

Stripe coating application

Before the application of the first full layer of AquaZinga, it is recommended that a stripe coat of AquaZinga is applied to all sharp edges, nuts, bolts and weld areas using a brush.

Theoretical Coverage

At a thickness of 50- 60µm DFT - 3.25m²/Kg

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ZINGALUFER

Zingalufer is a one-component Micaceous Iron Oxide moisture curing polyurethane sealer that can be used over Zinga and AquaZinga.

It has excellent resistance to both salts and chemical exposure and can be used as an intermediate layer or as a topcoat in covered areas where there is no UV exposure.

Zingalufer can be used on many structures in both atmospheric and immersed situations and can extend the service-life of many coating systems.

On structures such as sewage tanks it can be applied by airless spray at film-builds of 200µm DFT. Where it is used as a sealer beneath coatings such as two component acrylics, it can be applied with a conventional spray gun at film-builds in the range of 40 - 60 µm DFT.

Full product specification sheets are available to download at www.zinga-uk.com or from our office on **01243 770 726**.



7.5m²
coverage per lt
at 80µm
DFT

On Zinganised cast-iron or cast steel keels on GRP yachts for example, it can be applied (undiluted) by short-nap rollers and so makes for an easy application on site.

- Resistant to chemicals.
- Resistant to abrasion.
- Dirt repellent.
- Suitable for covering vertical surfaces to 200 µm in one coat.
- Available in 1L or 4L tins.
- Grey colour.

Theoretical Coverage

At a thickness of: 80 µm DFT - 7.5 m²/Lt.



ZINGATARFREE

This PU Tar-free MIO is a one-component paint finish that has excellent anti-corrosive and water-resistant properties, and is an ideal hull-blackening for all types of marine craft.



7.5m²
coverage per lt
at 80µm
DFT

PU Tar-free MIO can be applied over Zinga or Aquazinga, as a finishing coat on steel hulls and other structures in off shore and inland marine environments

It can be applied by brush, roller, conventional spray-gun or airless spray. To prepare for spraying simply requires the addition of Thinner 41 and thorough stirring as per normal paint application.

PU Tar-free MIO offers a tough black finish on boat-hulls, but unlike conventional tar-based coatings does not leach poisonous phenols into the environment.

When coated over Zinga, it is commonly used on the base of buried electricity pylon-legs, preventing attack from acidic groundwater, and at higher film-builds it can prevent attack from stray-currents.

Due to its very high salt-resistant properties, it has been used with great success on commercial vehicle chassis.

PU tar Free MIO is available in 1 & 4 Litre tins

- Ideal for immersion & subterranean application
- Excellent adhesion & abrasion resistance
- Satin Black colour
- Available in 1L & 4L Tins
- Excellent chemical and salt resistance
- Poison free

Theoretical Coverage

At a thickness of: 80 µm DFT - 7,5 m²/Lt.

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ZINGACERAM HS

Zingaceram provides high-specification, anti-corrosion protection for structures at risk from severe abrasion and chemical exposure.

Zingaceram is normally used on top of a base coat of Zinga and is a unique epoxy primer. Its pigmentation contains ceramic fillers comprising micaceous iron oxide particles that form over 200 layers of metallic platelets. These platelets act as moisture barriers.

The ceramic fillers are extremely hard wearing and allow Zingaceram to provide a highly durable, chemical-resistant coat.

This system can be overcoated with the majority of commercial topcoats including polyurethanes and antifouling systems.

- High solid content
- High chemical resistance
- Can cure at low temperatures down to 0°C
- Excellent barrier action against corrosion
- Excellent chemical and abrasion resistance
- Excellent salt barrier

Theoretical Coverage

At a thickness of: 60 µm DFT - 13 m²/Lt

Full product specification sheets are available to download at www.zinga-uk.com or from our office on 01243 770 726.

13m²
coverage per Lt
at 60µm
DFT

Technical Specification

Product	Zingaceram EP MIO HS
Colour	Metallic Silver
Surface Preparation	Over dry, clean Zinga system
Approx. Drying Times	for 60µm DFT at 20°C in a well ventilated environment Dust-proof: 1 hr Dry to handle: 5 hrs Hard: 18 hrs Fully cured: 7 days Overcoatable Min: 6 hrs Max: 3 days
Application Temp. Range	Min 15°C
Application Humidity Range	Max 70%
Substrate Temp. Min	>3°C above Dew Point
Shelf Life	12 months
Pot Life	6 hours
Packaging available in	5ltr (4 pt A; 1 pt B) 25ltr (16 pt A; 4 pt B)





ZINGACERAM PU

A very hard-wearing and UV-resistant acrylate-polyurethane topcoat that has been pigmented with ceramic particles to prevent erosion of the surface from wind-blown sand and dust particles.

13m²
coverage per lt
at 60µm
DFT

Zingaceram ZM PU is a two component system that can be applied onto most substrates and other coatings. It can also be used as a primer, adhesion coat, intermediate coat and topcoat.

It dries to a medium gloss level and imparts very tough adhesion characteristics whilst maintaining an excellent modulus of elasticity, which makes it suitable for application on off shore structures such as wind turbines.

Zingaceram ZM PU has good abrasion resistance and does not 'yellow'. With wide application potential, it can be applied onto ferrous and non ferrous metals, mineral substrates, concrete and several plastics.

In conjunction with **Zinga** and our **Zingaceram EP MIO** primer-sealer it was used to coat steelwork of the Olympic structures in London. The system was given an expected service-life of 60 years to first major maintenance.

Zingaceram ZM PU is available in **4 & 20** litre tins and the full range of RAL colours.

- Weathering and UV Resistance
- Excellent adhesion
- Available in all RAL colours
- Available in 4 and 20 litre tins
- Good Abrasion resistance

Theoretical Coverage

At a thickness of: 60 µm DFT - 13 m²/Lt

Technical Specification

Product	Zingaceram ZM PU
Colour	RAL Colours
Surface Preparation	Over dry, clean Zinga system or as per specification
Approx. Drying Times	for 50 µm DFT at 20°C - Dust-proof: 1 hour - Dry to handle: 4 hours - Hard: 20 hours - Fully cured: 4 days
Application Temp. Range	Min 15°C Max 40°C
Application Humidity Range	< 70%
Substrate Temp. Min	>3°C above Dew Point
Shelf Life	12 months
Pot Life	6 hours
Packaging available in	4 & 20 litre tins

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ALU ZM



Alu ZM is based on the same binder as Zinga. It has anti-corrosion properties, but uses aluminium particles instead of zinc, giving a metallic finish similar in appearance to hot-dip galvanising.

up to
12m²
per litre

Alu ZM is a quick drying one pack coating based on aluminium flakes. It can be applied directly onto old, uncorroded hot-dip galvanised or thermal sprayed zinc substrates or as an aluminium topcoat on ZINGA. It can be applied by brushing or spraying in a wide range of atmospheric circumstances.

Alu ZM is mainly applied for aesthetical reasons as it gives a shiny aluminium aspect, but it also has good chemical and abrasion resistance which allows it to be used in industrial environments.

In an environment where a more traditional galvanised finish is required, it is recommended that Alu ZM is applied over a layer of Zinga.

Alu ZM is available in 1, 2.5 and 15 litre containers

Theoretical Coverage

10-12m² per litre



AEROSOL SPRAYS

ZINGASPRAY

Zingaspray (500ml aerosol) offers all the advantages of the original Zinga in an easy-to-use spray can.

Zingaspray can be used for repairing or touching up galvanising or products previously treated with Zinga.



ZINGALUSPRAY

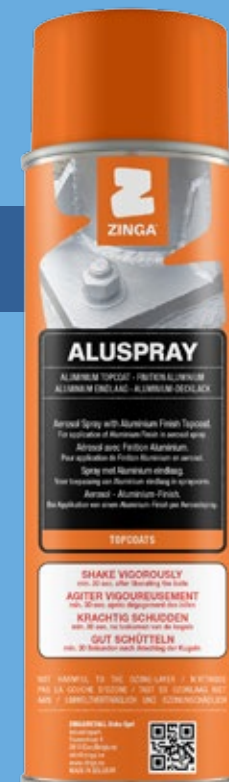
Zingalu (500ml aerosol) is similar to the original Zinga, but contains aluminium flakes to give a more galvanised appearance.

Zingalu is ideal for repairing or touching up galvanising.

ALUSPRAY

Aluspray (500ml aerosol) is a high-gloss finishing coat for Zinga. It is a metallic lacquer that provides a bright aluminium finish.

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CASE STUDY - TPS RUNCORN

Thermal Power Station Runcorn (TPS):

The €185 million TPS Runcorn built in Runcorn near Liverpool is a 'first' for Europe. It is the first major project that was designed using a unique combination of hot-dip galvanised (HDG) beams and film-galvanised beams (Zingalised beams) to give total corrosion protection to the steelwork.

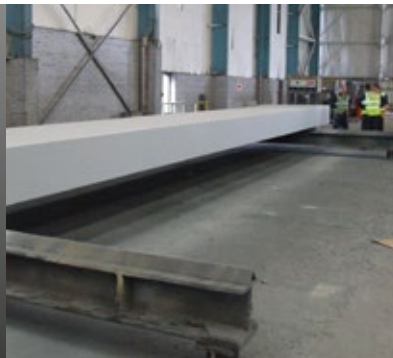
All of the standard upright rectangular steel joists were hot dip galvanised and the 65 box-section beams were film galvanised with Zinga the one component film galvanising solution.

The box beams took favour with Zinga as:

- The box-beams would require large holes to be drilled every linear metre for de-gassing
- The potential for distortion when being dipped at 450°C was extremely high, and each beam has 22 mounting holes drilled either end. Even distortion of 2mm would cause tremendous problems during erection.
- If the molten zinc did not drain out of the degassing holes it would have added a great deal of weight.
- At 20m in length and 20 tonnes each it was not practical to manoeuvre them into a HDG tank

As the upright HDG beams and the vertical film-galvanised box-beams are both zinc coated giving identical "open-circuit" electrical potentials of 1040mV, there was no danger of any galvanic reactions on any part of the structure.

Since the original application the existing galvanised hand rails atop the structure have been recharged with Zinga with minimal preparation.



The Zinga website is a valuable resource that can help save you time and money



The website **www.zinga-uk.com** is the primary source of information relating to the Zinga range of anti-corrosion products. Please take some time to browse the site and download all the relevant Data Sheets. Available resources include:

- Product range
- Quantity calculator
- Store locator
- Online distributor list
- Case studies
- Approved applicators

The Zinga product range is used in a wide range of industries, including:

- Energy, oil and gas
- Shipping
- Construction and restoration
- Light and heavy engineering
- Manufacturing
- Transport, rail and automotive
- Water and sewerage
- Agriculture, food and fisheries

MGDUFF

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